



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of: Anthony J. Grzesiak et al.
Serial No.: 10/016,472
Filing Date: December 10, 2001
Group Art Unit: 3683
Examiner: Melody M. Burch
Title: BRAKE BANDS FOR AN AUTOMATIC TRANSMISSION
 AND METHOD FOR CONTROLLING A GEAR SHIFT IN
 AUTOMATIC TRANSMISSION AND FEEDBACK LOOP
 CONTROL SYSTEM
Attorney Docket: DKT 00065A (BWI-00056)

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REPLY BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Pursuant to 37 CFR §1.193(1)(b), this is a Reply Brief in response to the Examiner's Answer mailed January 31, 2005.

Argument Regarding the 35 USC §102(b) Rejection of Claims 1, 7 and 8

Claims 1, 7 and 8 stand rejected under 35 U.S.C. §102(b), as being anticipated by U.S. Patent No. 5,752,588 to Reichert et al.

The Applicants respectfully traverse the 35 U.S.C. §102(b) rejection of claims 1, 7 and 8.

The law is clear that anticipation requires that a single prior art reference disclose each and every limitation of the claim sought to be rejected. 35 U.S.C. §102(b).

The law is also clear that a claim in dependent form shall be construed to incorporate all the limitations of the claim to which it refers. 35 U.S.C. §112, fourth paragraph.

With respect to the recitation of claim 1, as amended, the Applicants submit that Reichert et al. fails in teaching the claimed structure.

While Reichert et al. may arguably disclose a two-stage hydraulic circuit, there is no teaching that the “servo provides a rapid activation of [the] linkage during a first stage to rapidly expand [the] brake band, and a controlled compression and expansion of [the] brake band during a second stage.”

With respect to the Examiner’s assertion that “it is evident that Reichert et al. describe the invention to the same extent as Applicant,” the Applicants respectfully disagree.

Despite the Examiner’s assertions to the contrary in the Examiner’s Answer, there is no teaching whatsoever in Reichert et al. regarding rapid activation of a linkage during a first stage to rapidly expand the brake band, and a controlled compression and expansion of the brake band during a second stage. Reichert et al. is only concerned

with hydraulic fluid conservation, not rapid and/or controlled linkage actuation, as presently claimed.

With respect to the Examiner's assertions that "the use of a minimized amount of hydraulic fluid to achieve actuation suggests that actuation occurs faster since it takes less time to wait for the accumulation of a small or minimized volume of fluid" and "since the smaller apply piston associated with the first stage is the first to cause brake actuation, the first stage may be considered the quicker (or comparatively rapid) stage just as the first runner to reach a finish line of a race is considered to be the quicker runner," the Applicants respectfully disagree.

While Reichert et al. may arguably disclose a two-stage hydraulic circuit, there is no teaching that the servo provides a rapid activation of the linkage during a first stage to rapidly expand the brake band, and a controlled compression and expansion of the brake band during a second stage.

Conversely, Reichert et al. discloses, at column 1, lines 33-39, that:

It is an object of the invention to provide an hydraulic servo with travel compensation, for friction brakes for shifting an automatic transmission for motor vehicles, in order, at the time of shift, **to minimize the volume of hydraulic fluid required to apply a friction brake** to avoid an undesired pressure drop due to the volume of fluid which has to be made available. (Emphasis added).

Thus, Reichert et al. appears to disclose that the supposed first stage actuation of the hydraulic servo is accomplished slowly, due to the conservation of hydraulic fluid delivered to the pressure chamber of the supposed main piston of the servo. More specifically, Reichert et al. is concerned primarily with conserving hydraulic fluid in the event of a system leak, e.g., through the use of a compensation pressure chamber and

cooperating piston, than with rapid first stage piston actuation of the hydraulic servo, as presently claimed.

The Applicants submit that Reichert et al. does not anticipate claim 1 for at least the reasons set forth above. Furthermore, claims 7 and 8, which depend from and further define claim 1, are likewise not anticipated by Reichert et al.

Accordingly, the Applicants contend that the 35 U.S.C. §102(b) rejection of claims 1, 7 and 8 has been overcome.

Argument Regarding the 35 USC §102(b) Rejection of Claims 1, 7 and 8

Claims 1, 7 and 8 stand rejected under 35 U.S.C. §102(b), as being anticipated by JP-11264460 (using U.S. Patent No. 6,102,825 to Hisano et al. as an English equivalent).

The Applicants respectfully traverse the 35 U.S.C. §102(b) rejection of claims 1, 7 and 8.

Hisano et al. teaches no such structure as recited in claim 1, as amended.

Specifically, while Hisano et al. may arguably disclose a two-stage hydraulic circuit, there is no teaching that the “servo provides a rapid activation of [the] linkage during a first stage to rapidly expand [the] brake band, and a controlled compression and expansion of [the] brake band during a second stage.”

With respect to the Examiner’s assertion that “since the Hisano et al. reference shows a small apply piston 43 arranged closest to the linkage that promotes the initial brake application movement to the linkage and shows a larger apply piston 44 for more finite adjustments of the brake band pressure to the same extent as Applicant’s, Examiner maintains the rejections,” the Applicants respectfully disagree.

Despite the Examiner's assertions to the contrary in the Examiner's Answer, there is no teaching or suggestion by Hisano et al. that the "servo provides a rapid activation of [the] linkage during a first stage to rapidly expand [the] brake band, and a controlled compression and expansion of [the] brake band during a second stage." For example, Hisano et al. disclose at, column 3, lines 3-23:

According to the invention, the rotation of the rotational element reduces to synchronize with the rotation of the rotational element at the low speed gear stage. That is, the rotation of the rotational element reduces to stop. In this case, the de-energizing operation occurs at the band brake. Therefore, **the rotational element is not stopped from rotating by the band brake, because the engagement force occurred by the application of the aforementioned hydraulic pressure is small.** After that, when the rotational element is stopped from rotating and then the reverse rotation of the rotational element is started, the self-energizing operation occurs. Therefore, the engagement force of the band brake steeply increases to stop the rotational element from rotating.

In this case, the hydraulic pressure applied to the hydraulic servo of the band brake is the waiting pressure, which is lower for the predetermined amount than the hydraulic pressure to maintain the stop of the rotation of the rotational element. Therefore, **the rotational element is not steeply stopped, that is, the rotation of the rotational element changes gradually.** (Emphasis added).

Thus, Hisano et al. appears to disclose that the supposed first stage actuation of the hydraulic servo is accomplished slowly or weakly, due to the application of only a small amount of hydraulic pressure to the supposed main piston of the servo.

The Applicants submit that Hisano et al. does not anticipate claim 1 for at least the reasons set forth above. Furthermore, claims 7 and 8, which depend from and further define claim 1, are likewise not anticipated by Hisano et al.

Accordingly, the Applicants contend that the 35 U.S.C. §102(b) rejection of 1, 7 and 8 has been overcome.

Argument Regarding the 35 USC §103(a) Rejection of Claims 4, 5, 9-11, 13, 18-21 and
23

Claims 4, 5, 9-11, 13, 18-21, and 23 stand rejected under 35 U.S.C. §103(a), as being unpatentable over Reichert et al. in view of U.S. Patent No. 5,003,842 to Hatta et al.

The Applicant respectfully traverses the 35 U.S.C. §103(a) rejection of claims 4, 5, 9-11, 13, 16-21, and 23. The Examiner should note that claim 10 was canceled, without prejudice, in a previous response.

The standard for obviousness is that there must be some suggestion, either in the reference or in the relevant art, of how to modify what is disclosed to arrive at the claimed invention. In addition, "[s]omething in the prior art as a whole must suggest the desirability and, thus, the obviousness, of making" the modification to the art suggested by the Examiner. *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 1051, 5 U.S.P.Q.2d (BNA) 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988). Although the Examiner may suggest the teachings of a primary reference could be modified to arrive at the claimed subject matter, the modification is not obvious unless the prior art also suggests the desirability of such modification. *In re Laskowski*, 871 F.2d 115, 117, 10 U.S.P.Q.2d (BNA) 1397, 1398 (Fed. Cir.1989). There must be a teaching in the prior art for the proposed combination or modification to be proper. *In re Newell*, 891 F.2d 899, 13 U.S.P.Q.2d (BNA) 1248 (Fed. Cir. 1989). If the prior art fails to provide this necessary teaching, suggestion, or incentive supporting the Examiner's suggested modification, the rejection based upon this suggested modification is error and must be reversed. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d (BNA) 1566 (Fed. Cir. 1990).

The Examiner apparently cited Hatta et al. in order to cure the aforementioned deficiencies in the disclosure of Reichert et al. Although Hatta et al. may arguably suggest a piston position sensor, the Examiner is correct that Hatta et al. fail to teach or suggest a servo rod position sensor. However, Hatta et al. adds nothing to the disclosure of Reichert et al. in terms of disclosing the structure and function of the two-stage hydraulic servo, wherein the servo provides a rapid activation of the linkage during a first stage to rapidly expand the brake band, and a controlled compression and expansion of the brake band during a second stage, as presently recited in claim 1, as amended.

Because claim 1 is allowable over Reichert et al. and/or Hatta et al., either alone or in combination therewith, for at least the reasons stated above, claims 4 and 5, which depend from and further define claim 1, are likewise allowable.

Accordingly, the 35 USC §103(a) rejection of claims 4 and 5 has been overcome.

Neither Reichert et al. and/or Hatta et al., either alone or in combination therewith, teach or suggest such a structure as recited in claim 9, as amended.

Specifically, while Reichert et al. may arguably disclose a two-stage hydraulic circuit, there is no teaching of a "servo providing a rapid activation of the linkage during a first stage to rapidly expand said brake band, and a controlled compression and expansion of said brake band during a second stage; and ... [the] servo activating said linkage to provide positive compression and expansion to said brake band for applying friction to the brake drum to control the brake drum's speed of rotation; wherein said servo includes a first piston and a second piston, said first piston being smaller than said second piston, said first piston being operable to provide rapid movement of said

brake band and said second piston being operable to provide fine adjustments of said brake band.”

As previously noted, although Hatta et al. may arguably suggest a piston position sensor, the Examiner is correct that Hatta et al. fail to teach or suggest a servo rod position sensor. However, Hatta et al. does not cure the aforementioned deficiencies in the disclosure of Reichert et al.

Accordingly, the 35 U.S.C. §103(a) rejection of claim 9 has been overcome.

Because claim 9 is allowable over Reichert et al. and/or Hatta et al., either alone or in combination therewith, for at least the reasons stated above, claim 11, which depends from and further defines claim 9, is likewise allowable.

Neither Reichert et al. and/or Hatta et al., either alone or in combination therewith, teach or suggest such methodology as recited in claim 13, as amended.

Specifically, while Reichert et al. may arguably disclose a two-stage hydraulic circuit, there is no teaching of a method for “applying a first fast active compression force to said brake band to a predetermined position ... wherein a two-stage servo is used for controlling said brake band; wherein said servo has a first stage for rapidly applying band pressure, and a second stage for providing positive finite control of both apply and release pressures on said brake band during the shift.”

Again, as previously noted, although Hatta et al. may arguably suggest a piston position sensor, the Examiner is correct that Hatta et al. fail to teach or suggest a servo rod position sensor. However, Hatta et al. does not cure the aforementioned deficiencies in the disclosure of Reichert et al.

Accordingly, the 35 U.S.C. §103(a) rejection of claim 13 has been overcome.

Because claim 13 is allowable over Reichert et al. and/or Hatta et al., either

alone or in combination therewith, for at least the reasons stated above, claims 18-21 and 23, which depend from and further define claim 13, are likewise allowable.

Argument Regarding the 35 USC §103(a) Rejection of Claims 4, 5, 13-15 and 18-23

Claims 4, 5, and 13-15, and 18-23 are rejected under 35 USC §103(a) as being unpatentable over JP-11264460 to Hisano et al. in view of U.S. Patent No. 5,003,842 to Hatta et al.

The Applicants respectfully traverse the 35 U.S.C. §103(a) rejection of claims 4, 5, 13-15, and 18-23.

The Examiner apparently cited Hatta et al. in order to cure the aforementioned deficiencies in the disclosure of Hisano et al. Again, as previously noted, although Hatta et al. may arguably suggest a piston position sensor, the Examiner is correct that Hatta et al. fail to teach or suggest a servo rod position sensor. However, Hatta et al. adds nothing to the disclosure of Hisano et al. in terms of disclosing the structure and function of the two stage hydraulic servo of the invention, as presently recited in claim 1, as amended.

Because claim 1 is allowable over Hisano et al. and/or Hatta et al., either alone or in combination therewith, for at least the reasons stated above, claims 4 and 5, which depend from and further define claim 1, are likewise allowable.

Accordingly, the 35 USC §103(a) rejection of claims 4 and 5 has been overcome.

Furthermore, neither Hisano et al. and/or Hatta et al., either alone or in combination therewith, teach or suggest such methodology as claimed in claim 13.

Specifically, while Hisano et al. may arguably disclose a two-stage hydraulic circuit, there is no teaching of a method for “applying a first fast active compression

force to said brake band to a predetermined position ... wherein a two-stage servo is used for controlling said brake band; wherein said servo has a first stage for rapidly applying band pressure, and a second stage for providing positive finite control of both apply and release pressures on said brake band during the shift."

Again, as previously noted, although Hatta et al. may arguably suggest a piston position sensor, the Examiner is correct that Hatta et al. fail to teach or suggest a servo rod position sensor. However, Hatta et al. does not cure the aforementioned deficiencies in the disclosure of Hisano et al.

Accordingly, the 35 USC §103(a) rejection of claim 13 has been overcome.

Because claim 13 is allowable over Hisano et al. and/or Hatta et al., either alone or in combination therewith, for at least the reasons stated above, claims 14, 15 and 18-23, which depend from and further define claim 13, are likewise allowable.

Argument Regarding the 35 USC §103(a) Rejection of Claim 6

Claim 6 is rejected under 35 USC §103(a) as being unpatentable over Reichert et al. in view of U.S. Patent No. 4,070,981 to Guinn et al.

The Applicants respectfully traverse the 35 USC §103(a) rejection of claim 6.

The Examiner apparently cited Guinn et al. in order to cure the aforementioned deficiencies in the disclosure of Reichert et al. Although Guinn et al. may arguably disclose a strain sensor, it adds nothing to the disclosure of Reichert et al. in terms of disclosing the structure and function of the two-stage hydraulic servo, wherein the servo provides a rapid activation of the linkage during a first stage to rapidly expand the brake band, and a controlled compression and expansion of the brake band during a second stage, as presently recited in claim 1, as amended.

Furthermore, Guinn et al. discloses a mooring system for floating drilling vessels and does not appear to even mention automatic transmissions. Despite the Examiner's assertions to the contrary in the Examiner's Answer, the Applicants reiterate their position that one of ordinary skill in the art would not look to Guinn et al. for guidance on constructing or operating an automatic transmission as presently claimed.

Because claim 1 is allowable over Reichert et al. for at least the reasons stated above, claim 6, which depends from and further defines claim 1, is likewise allowable.

Accordingly, the 35 USC §103(a) rejection of claim 6 has been overcome.

Argument Regarding the 35 USC §103(a) Rejection of Claim 6

Claim 6 is rejected under 35 USC §103(a) as being unpatentable over JP-11264460 in view of U.S. Patent No. 4,070,981 to Guinn et al.

The Applicants respectfully traverse the 35 USC §103(a) rejection of claim 6.

The Examiner apparently cited Guinn et al. in order to cure the aforementioned deficiencies in the disclosure of Hisano et al. Although Guinn et al. may arguably disclose a strain sensor, it adds nothing to the disclosure of Hisano et al. in terms of disclosing the structure and function of the two-stage hydraulic servo, wherein the servo provides a rapid activation of the linkage during a first stage to rapidly expand the brake band, and a controlled compression and expansion of the brake band during a second stage, as presently recited in claim 1, as amended.

Furthermore, Guinn et al. discloses a mooring system for floating drilling vessels and does not appear to even mention automatic transmissions. Thus, one of ordinary skill in the art would not look to Guinn et al. for guidance on constructing or operating an automatic transmission as presently claimed.

Because claim 1 is allowable over Hisano et al. for at least the reasons stated above, claim 6, which depends from and further defines claim 1, is likewise allowable.

Accordingly, the 35 USC §103(a) rejection of claim 6 has been overcome.

Argument Regarding the 35 USC §103(a) Rejection of Claim 12

Claim 12 is rejected under 35 USC §103(a) as being unpatentable over Reichert et al. in view of U.S. Patent No. 5,003,842 to Hatta et al. as applied to claim 9 above, and further in view of Guinn et al.

The Applicants respectfully traverse the 35 USC §103(a) rejection of claim 12.

The Examiner apparently cited Guinn et al. in order to cure the aforementioned deficiencies in the disclosure of Reichert et al. and/or Hatta et al. Although Guinn et al. may arguably disclose a strain sensor, it adds nothing to the disclosure of Reichert et al. and/or Hatta et al. in terms of disclosing the structure and function of the two-stage hydraulic servo, wherein the servo provides a rapid activation of the linkage during a first stage to rapidly expand the brake band, and a controlled compression and expansion of the brake band during a second stage, as presently recited in claim 9, as amended.

Furthermore, Guinn et al. discloses a mooring system for floating drilling vessels and does not appear to even mention automatic transmissions. Thus, one of ordinary skill in the art would not look to Guinn et al. for guidance on constructing or operating an automatic transmission as presently claimed.

Because claim 9 is allowable over Reichert et al. and/or Hatta et al., either alone or in combination therewith, for at least the reasons stated above, claim 12, which depends from and further defines claim 9, is likewise allowable.

Accordingly, the 35 USC §103(a) rejection of claim 12 has been overcome.

Conclusion

For the reasons advanced above, appellant respectfully urges that the rejections of claims 1, 4-9, 11-15 and 18-23 under 35 USC §§102(b) and/or 103(a) are improper. Reversal of the rejections in this appeal is respectfully requested.

The Commissioner is hereby authorized to charge any fees that may be required for filing a brief in support of an appeal in accordance with 37 CFR §1.17(c), or credit any overpayment to Applicant's Deposit Account No. 501612.

If for some reason applicant has not requested a sufficient extension of time and/or has not paid a sufficient fee necessary to prevent abandonment of this application, please consider this as a Request for an Extension for the required time period and/or authorization to charge Applicants' Deposit Account No. 501612 for any extension of time fee which may be due.

Respectfully submitted,

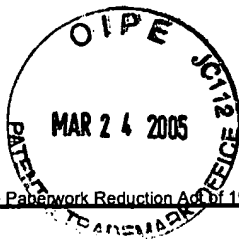
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Date: March 21, 2005

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TRANSMITTAL FORM (to be used for all correspondence after initial filing)	Application Number	10/016,472
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	First Named Inventor	Anthony J. Grzesiak, et al.
	Art Unit	3683
	Examiner Name	Melody M. Burch
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Date	March 21, 2005	Reg. No. 32775

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